

In the Claims:

1. (Currently Amended) A gas sensor for determining the concentration of a gas component of a measurement gas, comprising:

a layer structure including a reference electrode completely surrounded by a gastight material and;

a catalytically active working electrode which is to be exposed to the measurement gas;

wherein the gastight material is formed in part by a solid electrolyte to which both the reference electrode and the working electrode are connected and in remaining part by a low-sodium glass cover layer.

2. (Canceled).

3. (Currently Amended) The gas sensor of claim 1, [[2,]] wherein the solid electrolyte is formed by an oxide ion-conducting material.

4. (Original) The gas sensor of claim 3, wherein the oxide ion-conducting material is yttrium-stabilized zirconium dioxide.

5. (Canceled).

6. (Original) The gas sensor of claim 1, wherein the gastight material is formed in sections by an electrically insulating carrier material.

7. (Original) The gas sensor of claim 1, further including a heating system.

8. (Original) The gas sensor of claim 1, wherein the reference electrode has at least one material component which is chosen from the following group: metals, metal oxides, and mixtures thereof.

9. (Original) The gas sensor of claim 1, wherein the working electrode has at least one material component which is chosen from the following group: precious metals, precious metal alloys, oxides, oxide mixtures and mixtures thereof.

10. (Original) The gas sensor of claim 1, wherein the gas sensor operates according to a potentiometric measurement principle.

11. (Original) The gas sensor of claim 9, wherein the gas sensor is capable of measuring λ values which are below 0.9.

12. (Original) The gas sensor of claim 11, wherein the gas sensor is capable of measuring λ values below 0.6.

13. (Original) The gas sensor of claim 12, wherein the gas sensor is capable of measuring λ values below 0.4.

14. (Currently Amended) A process for producing a gas sensor used for determining the concentration of a gas component of a measurement gas, comprising the steps of:
providing a carrier layer of electrically insulating material;
applying a solid electrolyte layer to the carrier layer;
forming a reference electrode and a working electrode on the solid electrolyte layer; and
covering the reference electrode with a gastight cover layer that is formed in part by the solid electrolyte and in remaining part by a low-sodium glass cover layer.

15. (Canceled).

16. (Original) The process of claim 14, wherein electrically conductive connections are formed to the reference electrode and the working electrode.

17. (Original) The process of claim 14, wherein the solid electrolyte layer is formed by an oxide ion-conducting material.

18. (Canceled).

19. (Original) The process of claim 14, further comprising the step of forming an electrical heating system on a side of the carrier layer facing away from the reference electrode and the working electrode.

20. (Currently Amended) The process of claim 14, ~~[[15,]]~~ wherein the reference electrode has at least one material component chosen from the following group: metals, metal oxides, and mixtures thereof.

21. (Currently Amended) The process of claim 14, ~~[[15,]]~~ wherein the working electrode has at least one material component chosen from the following group: precious metals, precious metal alloys, oxides, oxide mixtures and mixtures thereof.

22. (Original) The process of claim 14, further comprising the step of choosing a catalytic activity of the working electrode such that the gas sensor is capable of measuring λ values which are below 0.9.

23. (Original) The process of claim 22, wherein the gas sensor is capable of measuring λ values below 0.6.

24. (Original) The process of claim 23, wherein the gas sensor is capable of measuring λ values below 0.4.